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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/501,078	02/09/2000	Arnon Netzer	180/01261	3371

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EXAMINER
WON, YOUNG N

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 10/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/501,078	Applicant(s) NETZER ET AL.	
	Examiner Young N Won	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *19-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 26-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *19-25* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3-5, & 7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. During a telephone conversation with William H. Dippert on September 30, 2002 a provisional election was made with traverse to prosecute the invention of Group I: Method and apparatus regarding scheduling of accumulated data, claims 1-18 and 26-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

2. Claims 1-18 and 26-33 have been examined.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Fig.3, #84. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. A channel cannot comprise of plurality of channels.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 7-18, and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (US 5,712,851 A) in view of Baker-Harvey (US 6,385,638 B1).

Independent:

As per claims 1 and 14, Nguyen teaches a method (see abstract) of scheduling the handling of data from a plurality of channels, comprising: accumulating data from a plurality of channels (see col.2, lines 1-4) which includes a processor which always processes data of a channel without interruption responsive to scheduling (see col.2, lines 16-19 and col.3, lines 2-7); scheduling a processor (see abstract: "processor for scheduling" and col.2, line 15) to handle the accumulated data from at least one first one of the channels, once during a first cycle time (see col.2, lines 9-19) or at least twice (see col.3, 26-28; and col.4, lines 12-15: **NOTE:** If the # of slots in the slot ring is determined by the VC with the lowest cell rate, then obviously a VC with a larger cell rate will occupy more slot ring, thereby causing the processor to handle the accumulated data at least twice), with a first interval between the scheduling; and scheduling the processor to handle the accumulated data from at least one second one of the channels, once during a second cycle time different from the first cycle time (see col.2, lines 9-19), or at least twice (see col.3, 26-28; col.4, lines 12-15; and above NOTE), with a second interval between the scheduling, which second interval includes the entire first interval. Nguyen does not teach that the system is a server. Baker-Harvey teaches of a scheduler system that is a server (see col.17, lines 15-17). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made to employ the teachings of Baker-Harvey within the system of Nguyen, by implementing a server comprising of the functionality of scheduler system, because servers are computing devices with a processor for performing a single dedicated operation or duty such as routing or switching, retrieving and storing, hosting web

pages, ect. Therefore, servers are interchangeable with computers, routers, bridges, switches, or anything that has a processor and performs dedicated operations.

As per claim 17, Nguyen teaches of a remote access device, comprising: accumulating data from respective channels; a processor which handles the accumulated data; and a scheduler which schedules the processor to handle accumulated data from a first channel once during a first cycle time and data from a second channel once during a second cycle time different from the first cycle time, without interrupting the processor while it is processing data from a channel (see claim 1 and 14 rejection above). Nguyen does not teach that the remote access device is a server or that it comprises of a plurality of channel drivers. Baker-Harvey teaches of a server (see claim 1 and 14 rejection above) and channel drivers (see col.15, lines 21-22). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made to employ the teachings of Baker-Harvey within the system of Nguyen, by implementing a driver for the plurality of channels within the scheduler system, because without drivers, the processor would not know that the channels exists and therefore would not accumulate the data from that channel.

As per claim 26, Nguyen teaches of a method of scheduling the handling of data, by a remote access server (see claim 1 rejection above) keeping track of a short cycle and a long cycle (see col.1, lines 41-43 and col.3, lines 60-64), from a plurality of channels including at least one short cycle channel and at least one long cycle channel, comprising: accumulating data from the plurality of channels by the server (see col.2, lines 1-4); scheduling a processor of the server to handle the accumulated data from all

the short cycle channels (see col.2, line 15); determining whether a current short cycle has elapsed after scheduling the processor to handle the data from all the short cycle channels; and scheduling the processor to handle the accumulated data from one of the at least one long cycle channel if the current short cycle did not elapse, if there is a long cycle channel which was not scheduled yet during the current long cycle (see col.1, lines 38-41 and col.2, 19-24).

As per claim 31, Nguyen teaches a method of scheduling the handling of a plurality of connections, comprising: accumulating data from a plurality of channels by a remote access server (see claim 1 rejection above); determining for at least one of the connections a quality of service level; and scheduling the processor to process data from the plurality of connections in an order determined responsive to the determined quality of service level (see col.1, lines 26-31).

Dependent:

As per claims 2 and 29, Nguyen further teaches wherein the first cycle (long cycle) begins concurrently with a second cycle (short cycle) (see col.2, lines 16-19).

As per claims 3 and 30, Nguyen further teaches wherein the first cycle time (long cycle time) is an integer multiple of the second cycle time (short cycle time) (see col.4, lines 12-23).

As per claim 4, Nguyen further teaches wherein scheduling the processor to handle the accumulated data comprises scheduling, the processor, during the second cycle, to handle the accumulated data from substantially all the at least one second

channels, before scheduling the processor to handle data from any other of the plurality of channels (see col.2, lines 22-24).

As per claim 5, Nguyen further teaches wherein scheduling the processor to handle the accumulated data from the at least one first one of the channels comprises checking or determining whether the second cycle (short cycle) has elapsed and scheduling the processor to handle the accumulated data from one of the at least one first channels (long cycle channel) only if the second cycle (short cycle) has not elapsed (see claim 26 rejection above).

As per claims 7 and 18, Nguyen further teaches wherein the scheduling comprises scheduling the processor to handle the accumulated data from at least one of the second channels at least twice (first channel at least twice) before scheduling the processor to handle data from at least one of the first channels (second channel) (see claim 1 rejection above: Note).

As per claim 8, Nguyen further teaches wherein scheduling the processor to handle the accumulated data comprises allowing the: processor to utilize up to a predetermined amount of processing time for each channel (see col.2, line 6).

As per claim 9, Nguyen does not teach wherein the processor runs an operating system, which performs preemption; therefore by reasons of obviousness, Nguyen further teaches wherein the processor does not run an operating system, which performs preemption.

As per claim 10, Nguyen further teaches wherein scheduling the processor comprises having the processor wait without handling data from any of the channels if

all the channels were scheduled for handling during their respective current cycles (see col.3, lines 35-37).

As per claim 11, Nguyen teaches of further comprising measuring the waiting time of the processor in the first cycle and using the measured time in determining whether to accept handling data from an additional channel (see col.3, lines 36-34).

As per claim 12, Nguyen further teaches wherein the scheduling of handling the data of one channel is performed without interrupting the processor in the middle of handling accumulated data from a different channel (see col.4, lines 25-26).

As per claims 13 and 16, Nguyen further teaches of further comprising processing an entire block of accumulated data of the scheduled channel responsive to the scheduling (see col.2, lines 15-19).

As per claim 15, Nguyen further teaches wherein scheduling the processor comprises scheduling the processor to handle data from the first one of the channels once during a first cycle time and scheduling the processor to handle data from the second one of the channels once during a second cycle time longer than the first cycle time (see claim 1 rejection above).

As per claim 28, Nguyen teaches of further comprising of waiting, after scheduling the processor to handle the data from all the short cycle channels, until the beginning of the next short cycle without processing data from any channel, if all the long cycle channels were already scheduled during the current long cycle (see col.4, lines 39-46).

As per claim 32, Nguyen further teaches wherein the scheduling comprises scheduling the processor to handle data from at least one first connection before handling data from at least one second connection having a lower quality of service level than the at least one first connection (see col.2, lines 4-8).

As per claim 33, Nguyen teaches of further comprising changing the quality of service level of at least one of the connections while accumulating the data and changing the order of scheduling responsive to the change in the quality of service level (see col.1, lines 56-63).

Conclusion

Nguyen does not explicitly teach of: a long cycle or short cycle; short cycle time or long cycle time; scheduling the processor to handle data from a channel once or how much number of times; or how the channels are prioritized, but Nguyen does teach that such variables such as ring size (# of slots), ordering of the channels, and cell spacing can vary according to individual channels' QOS and transmission rate. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to schedule a processor to handle a plurality of channels in any order, how many number of times, and at what rate, because all such data does not patentably distinguish the claimed invention. These data are steps of merely reacting to a scheduling scheme not mention in the claims. The way the claims are written there could be a possibility that the applicant has veered from the invention at hand to include

all possible paths inconsistent of each independent claim. Without further limiting the claims to consistently, clearly, and distinctly claim the invention, the applicant can be restricted with an election of species

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Young N Won whose telephone number is 703-605-4241. The examiner can normally be reached on M-Th: 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 703-305-9648. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Young N Won

October 1, 2002

AYAZ SHEIKH
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TECHNOLOGY CENTER 2100